

## Ring-Torsion Load Cells RTB



- PTB & OIML approved as suitable for trade use (up to 5000 d and 75010 d in case of multi-divisional scales)
- High accuracy, even for very small utilisation ranges (down to 15% in case of trade use according to OIML)
- Low power consumption thanks to high impedance resistance of 1100Ω.
- Protection to EEx ib IIC T 6 for use in explosion hazardous areas
- Protection class IP 68

### Application

Acting as a transducer, the load cell converts the mechanical input signal, the load, proportionally into the electrical output voltage.

The special design of the ring-torsion load cells offers particular benefits for the user:

- The extremely low headroom simplifies the use in almost all weighing applications.
- The sturdy design enables easy transport, installation, and operation, even under harsh environmental conditions (interfering forces, or extreme temperatures)

### Construction

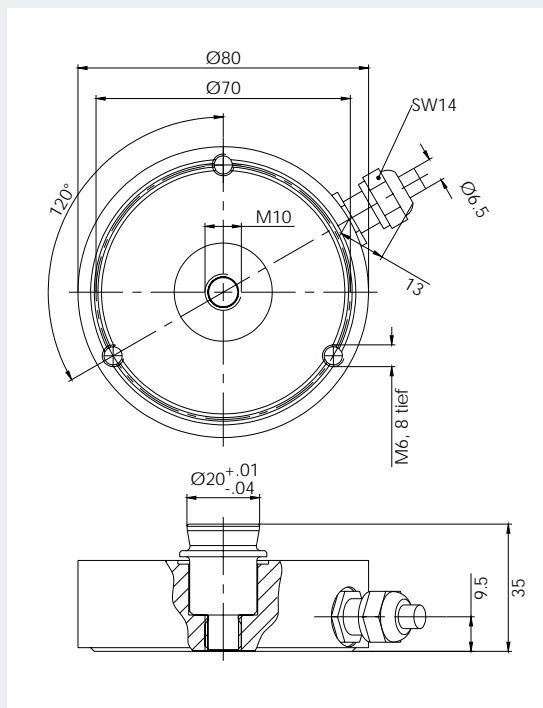
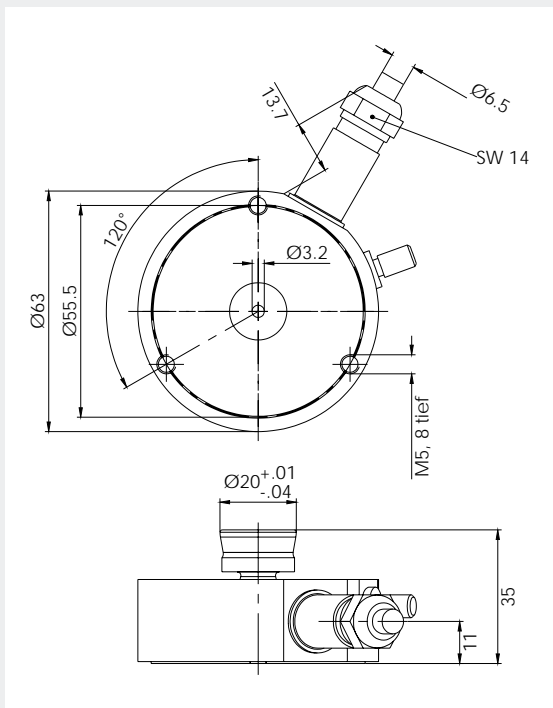
- Hermetically sealed due to laser welding and glass-metal transition (IP68)
- Corrosion protection due to the use of stainless steel
- All electrical components are inside the load cell and are thus optimally protected
- The high-quality, sturdy connection cable is lead radially into the load cell
- Mechanically compatible with the RTK series

### Functions

- High repeatability
- High long-term stability and, thus, continuing and consistently high accuracy
- Minimal effect on accuracy by side forces
- High reliability and availability, even in case of unavoidable shock loads, constraining forces or electrical interferences
- Moment-free load input/output due to direct, vertical force flow

**RTB 0,13t**

**RTB 0,25t / 0,5t**



**Order No.**

Variants	Accuracy class		
	C3	C3MI7,5	C6
0.13t	V041085.B01	---	---
0.25t	V041086.B01	---	---
0.50t	V041087.B01	V041087.B03	V041087.B06
0.25t MR	V041086.B07	---	---
0.50t MR	V041087.B07	---	please enquire
<b>Order No. Version ATEX II 2G; EEx ib IIC T6 / II 2D T70°C</b>			
0.13t	V041085.B11	---	---
0.25t	V041086.B11	---	---
0.50t	V041087.B11	---	please enquire

Other Variants  
mounts please enquire

**Accessories:**  
Elastomer mount, Compact

## Technical Data

Rated capacity	$E_{max}$	0,13t	0,25t	0,5t			
Accurate class		C3	C3	C3	C3MI7.5	C6	Bezug
Sensitivity	$C_n$	1mV/V $\pm$ 0.1%	1.75mV/V $\pm$ 0.1%	2mV/V $\pm$ 0.1%			
Combined error	$F_{comb}$	$\pm$ 0.018%	$\pm$ 0.023%		$\pm$ 0.0115%	$C_n$	
Minimum dead load output return	$F_{dr}$	$\pm$ 0.0167%	$\pm$ 0.0167%	$\pm$ 0.0066%	$\pm$ 0.0083%	$C_n$	
Creep (30 m)	$F_{cr}$	$\pm$ 0.012%	$\pm$ 0.0245%		$\pm$ 0.0123%	$C_n, B_{tn}$	
Hysteresis		$\pm$ 0.017%	$\pm$ 0.0167%		$\pm$ 0.0083%	$C_n, B_{tn}$	
Temperature effect on zero sensitivity per 10K	$TK_0$	$\pm$ 0.008% ---	$\pm$ 0.014% $\pm$ 0.007%	$\pm$ 0.014% ---	$\pm$ 0.009% $\pm$ 0.005%	$C_n, B_{tn}$ Option <b>MR</b>	
Temperature effect on sensitivity per 10K	$TK_c$	$\pm$ 0.008%	$\pm$ 0.01%		$\pm$ 0.005%	$C_n, B_{tn}$	
Maximum number of load cell intervals	$n_{LC}$	3000	3000		6000		
For multi-divisional scales:	Z			7500			
Minimum load cell verification interval	$V_{min}$	$E_{max}/17500$ ----	$E_{max}/10000$ $E_{max}/20000$	$E_{max}/10000$ ---	$E_{max}/15000$ $E_{max}/28000$	Standard Option <b>MR</b>	
Min. utilisation range	$B_{amin}$	17% ---	30% 15%	30% --	40% 21%	$E_{max}$ Option <b>MR</b>	
Max. utilisation range	$B_{amax}$	100%				$E_{max}$	
Load limit *	$L_l$	150%				$E_{max}$	
Max. transverse load	$L_q$	100%				$E_{max}$	
Input resistance	$R_e$	1260 $\pm$ 100 $\Omega$	1100 $\pm$ 50 $\Omega$	1110 $\pm$ 50 $\Omega$			
Output resistance	$R_a$	1020 $\pm$ 0.5 $\Omega$	1025 $\pm$ 50 $\Omega$	1025 $\pm$ 25 $\Omega$			
Zero signal	$S_0$	1%	1.5%	1%		$C_n$	
Supply voltage	$U_s$	max. 30V (recommended): 5 – 15V					
Nominal temperature range	$B_{tn}$	-10°C - +40°C					
Service temperature range	$B_{tu}$	-30°C - +85°C	-30°C - +75°C				
Storage temperature range		-50°C - +95°C	-50°C - +80°C				
Protection class		IP66 / IP68					
Cable specification		length of cable 5m, Screen insulated from housing ( 0.13t ), or connected to housing (0.25 – 0.50t )					
Colour code		input+ ( 82 ): pink / input- ( 81 ): grey output+ ( 28 ): brown / output- ( 27 ): white					
Material		Stainless steel					
Corrosion protection		see table of Chemical resistance DDP8 483					
Recommended torque for attachment bolts		8 Nm	12 – 14 Nm				
ATEX-approval		II 2G; EEx ib IIC T6 / II 2D T70°C					

\*: Permitted vibration stress to DIN 50100: 70%  $E_{max}$ . Peak value of stress must not exceed  $E_{max}$ .

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